

FIGURE 1A
(PRIOR ART)

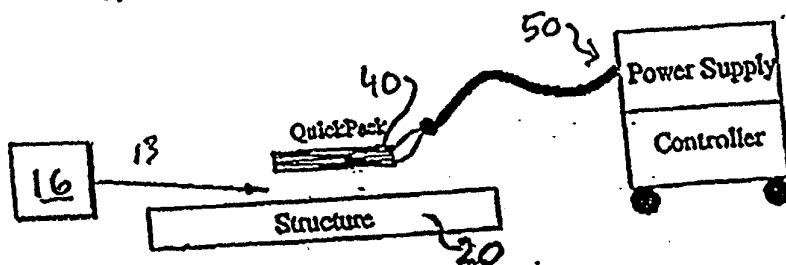


FIGURE 1B

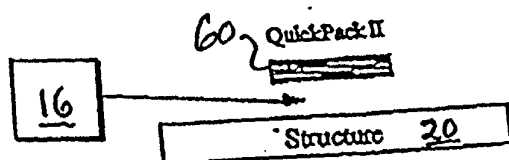


FIGURE 1C

664240-2E100E60

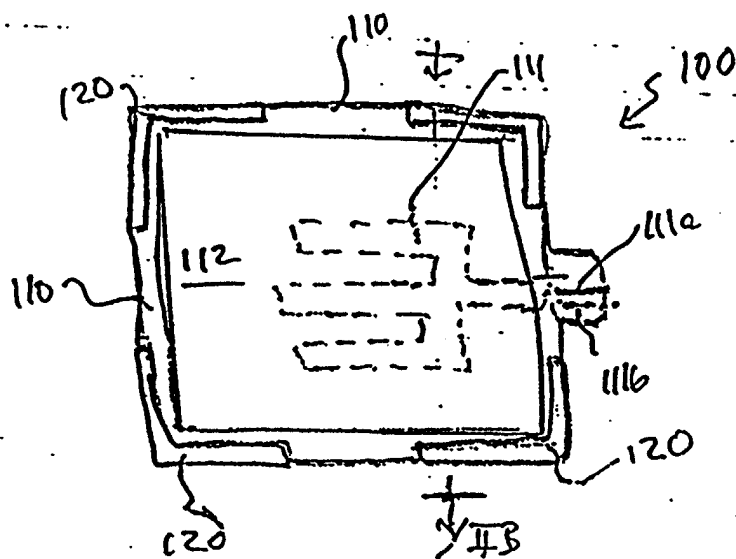


FIGURE 2A

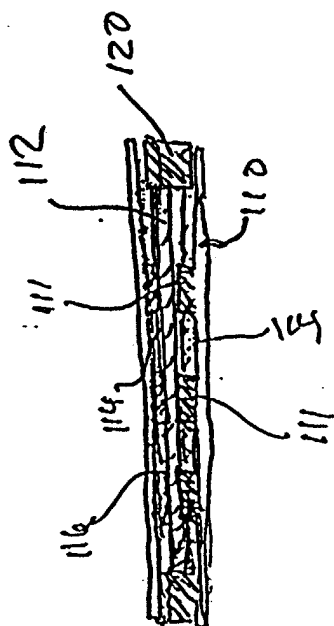


FIGURE 2B

662240-2E100E60

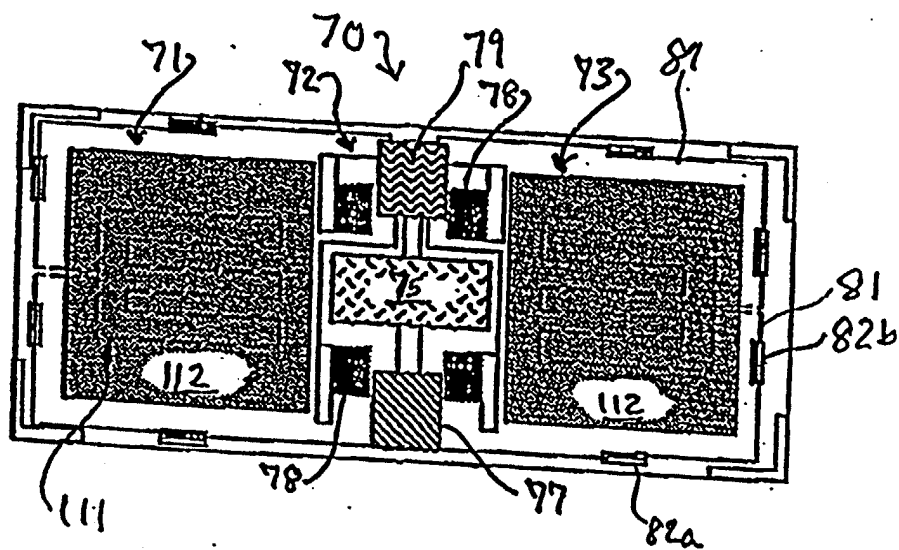


FIGURE 2C

FIGURE 3

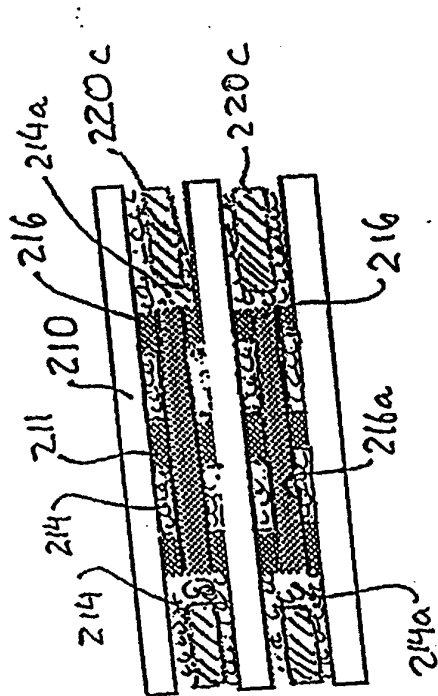


FIGURE 4A

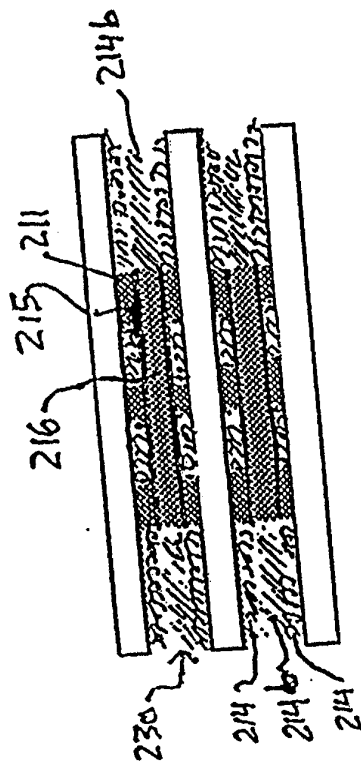


FIGURE 4B

Layer 1 Polyimide

210

Layer 2 Conductor

Spacer/ Piezo

2202

216

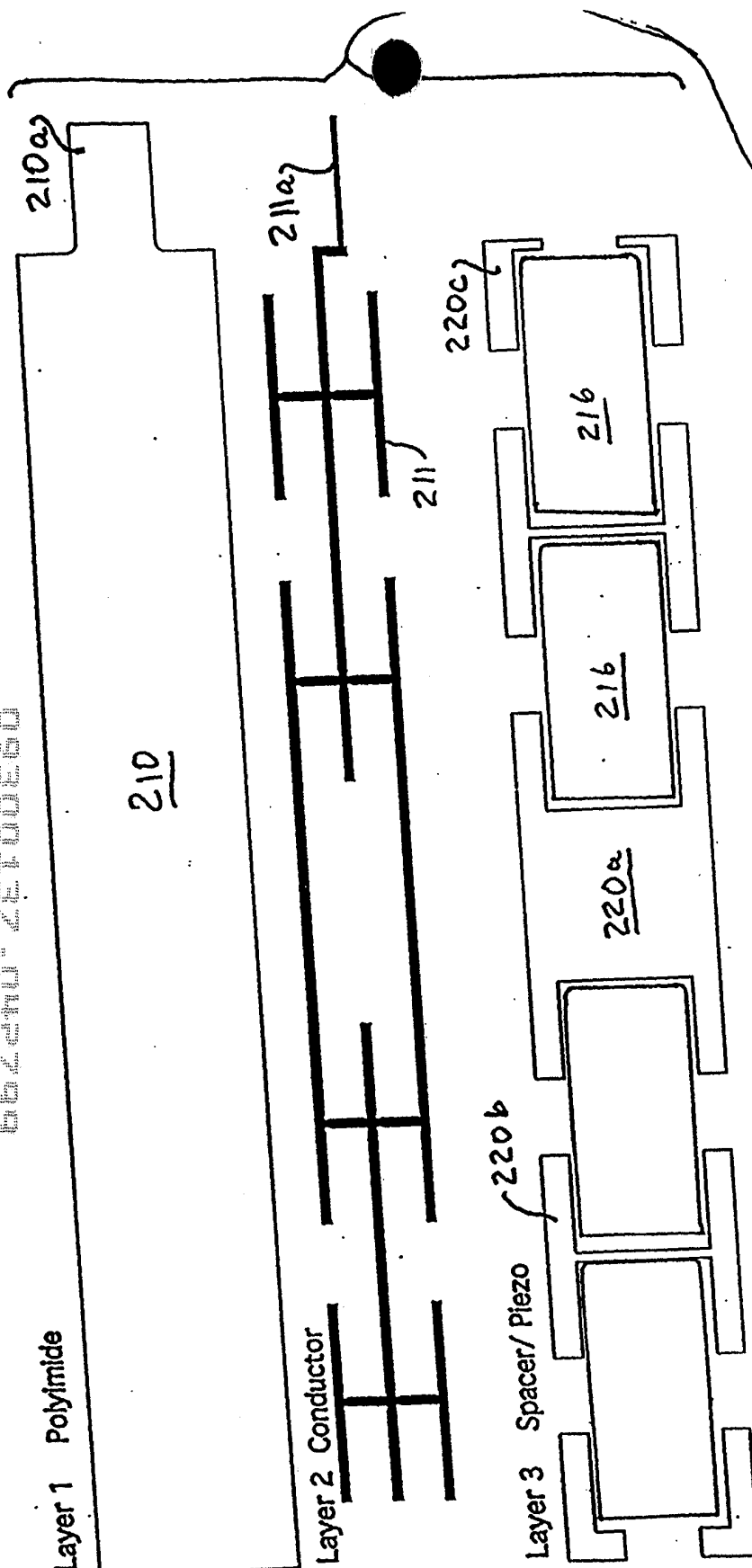
216

216

Cross Section

FIGURE 5A

FIGURE 5



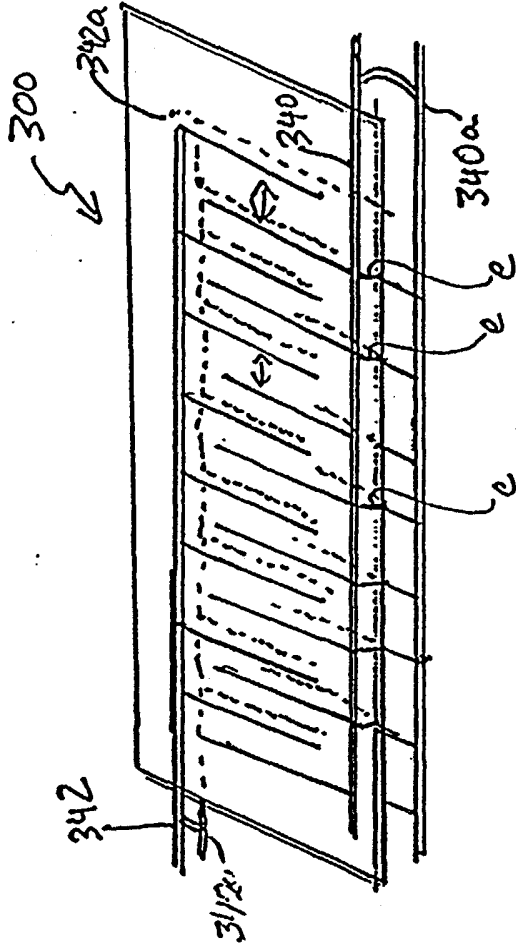


FIGURE 6

004240-4ET0060

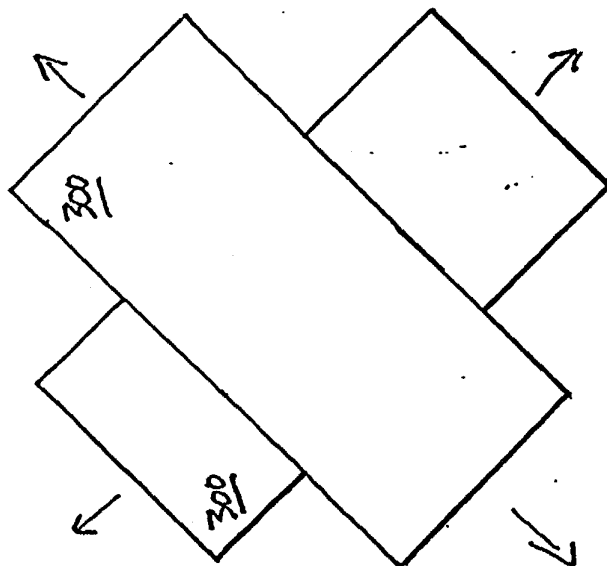


FIGURE 7

66240-ET0050

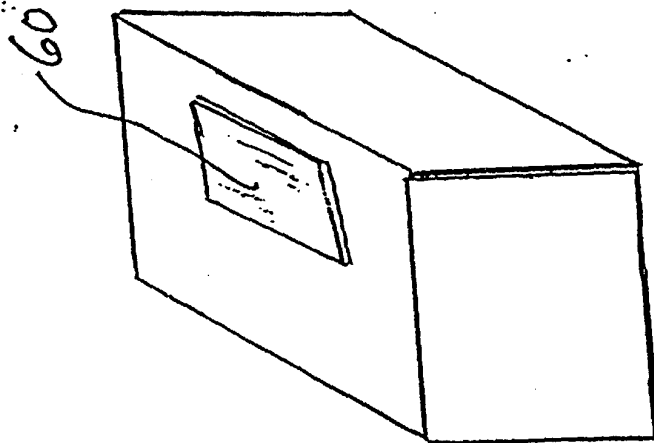


FIGURE 8A

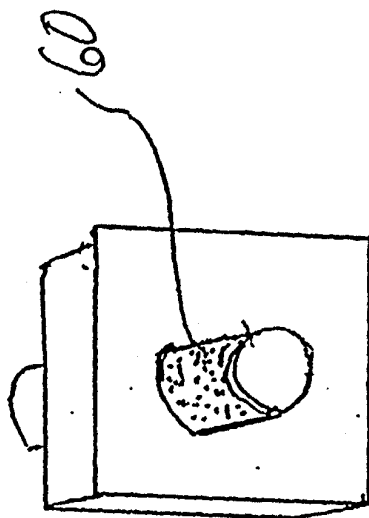
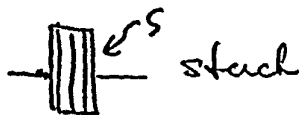


FIGURE 8B

FIGURE 9

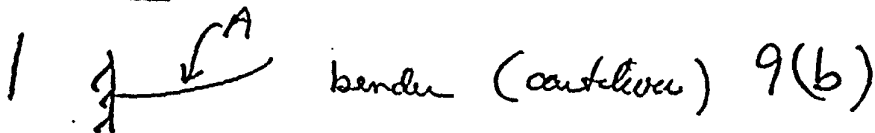
9(a) - 9(h)
Page 1 of 2

Single actuators:

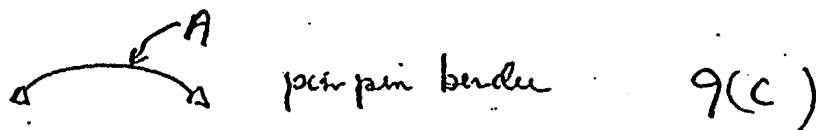


stack

9(a)

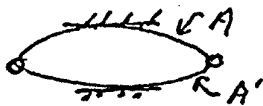


bender (cantilever) 9(b)



pin pin bender 9(c)

Multiple actuators:



pin pin bellows 9(d)



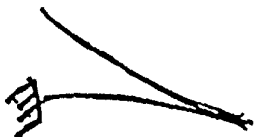
multiple pin pin bellows 9(e)



pin pin with lever 9(f)



pin pin with cantilever bender 9(g)



out & back cantilever

9(h)

FIGURE 9

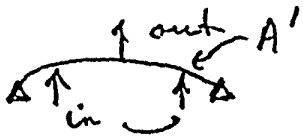
9(i) - 9(q)

Page 2 of 2

in conjunction with bender-levers:

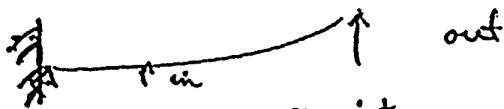


pin pin overhang 9(i)



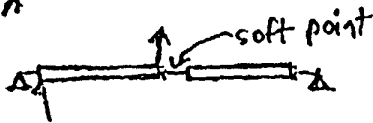
pin pin

9(j)



cantilever

9(k)

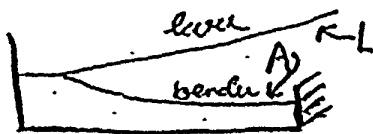


pin-pin with soft points

9(l)

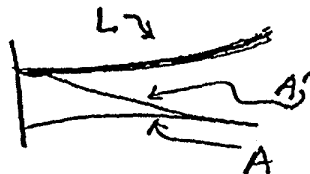
multiple actuator / bender levers:

cantilever bender + cantilever lever



9(m)

out & back cantilever bender + cantilever lever



9(n)

pin pin bellows + pin pin overhang

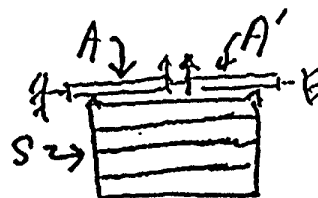


9(o)

stack + pin pin



9(p)



9(q)

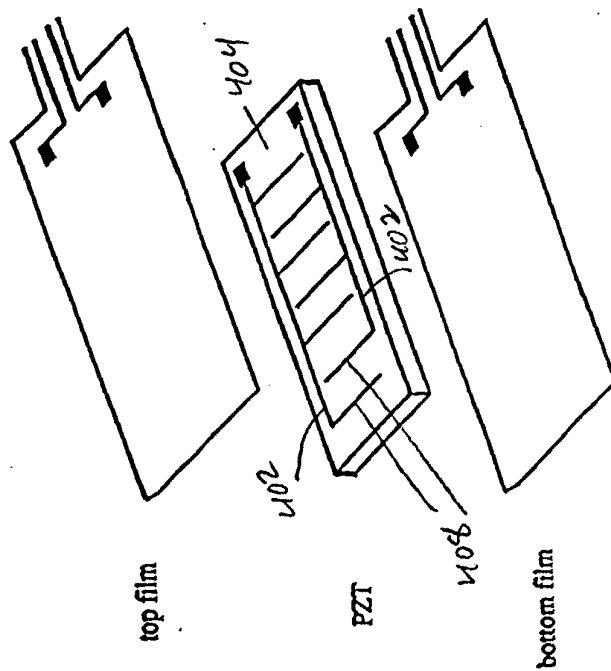


FIGURE 10A

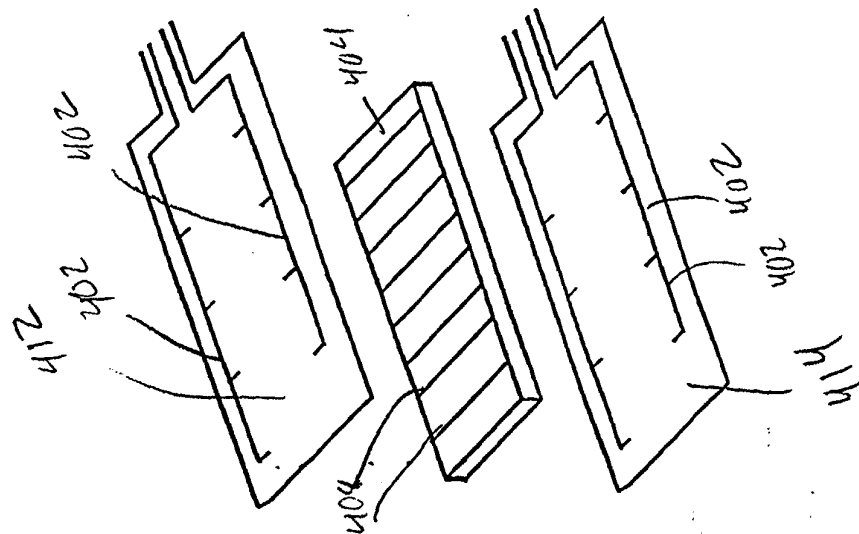


FIGURE 10B

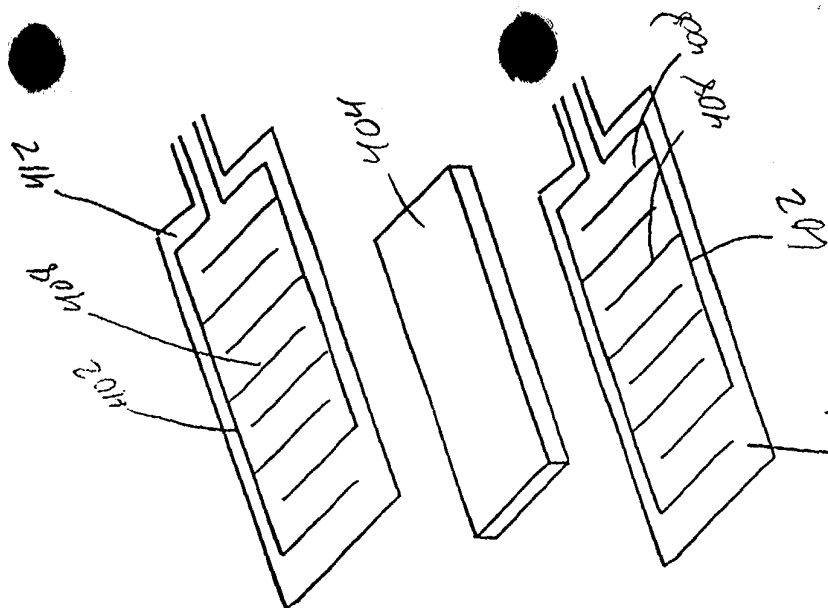


FIGURE 10C

003003-04200000

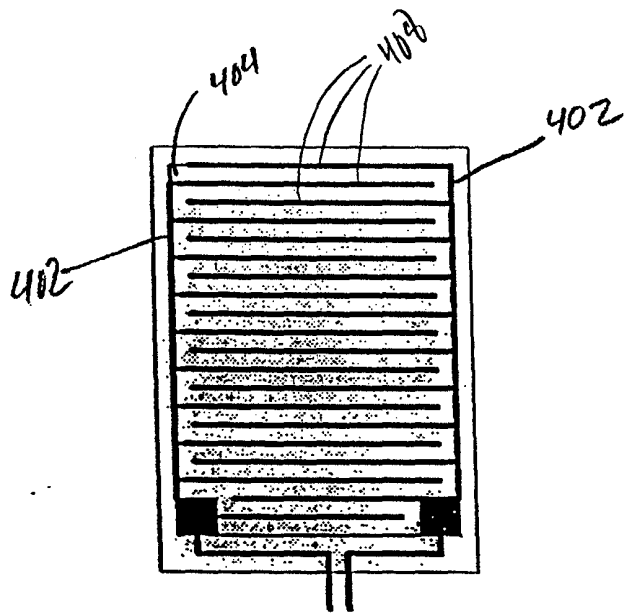


FIGURE 11A

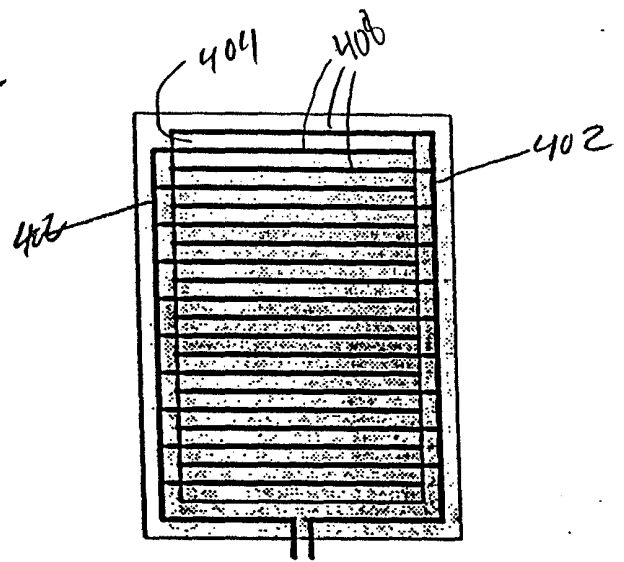
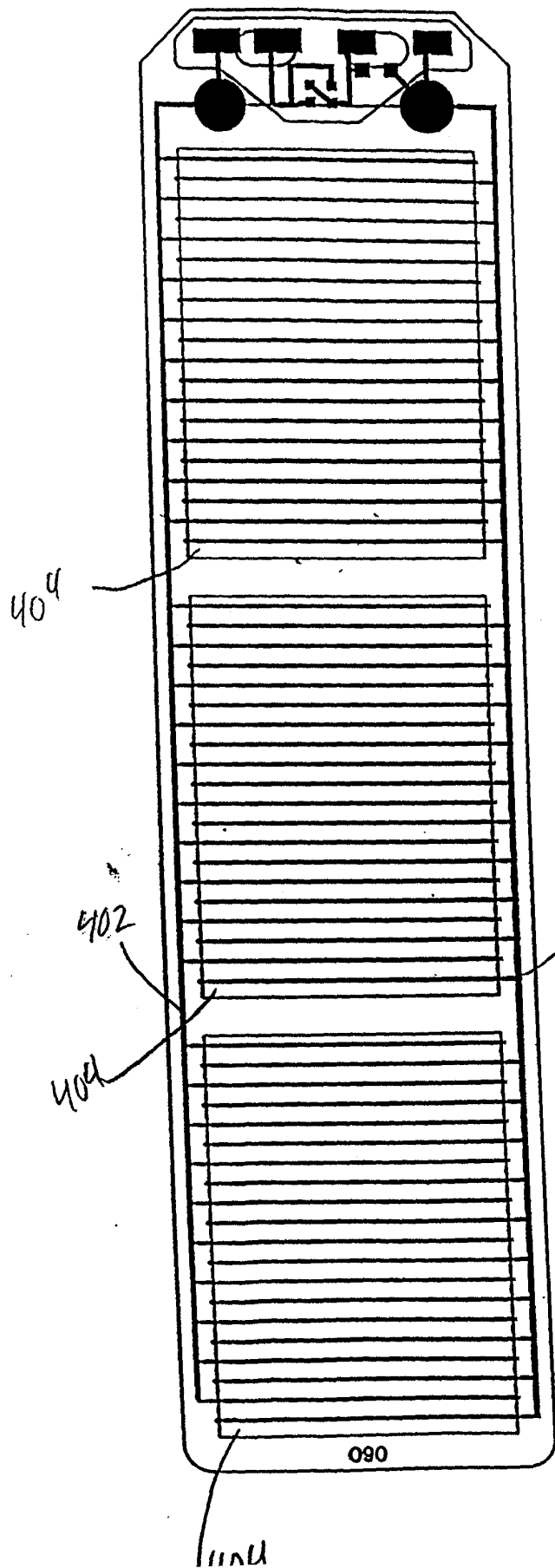
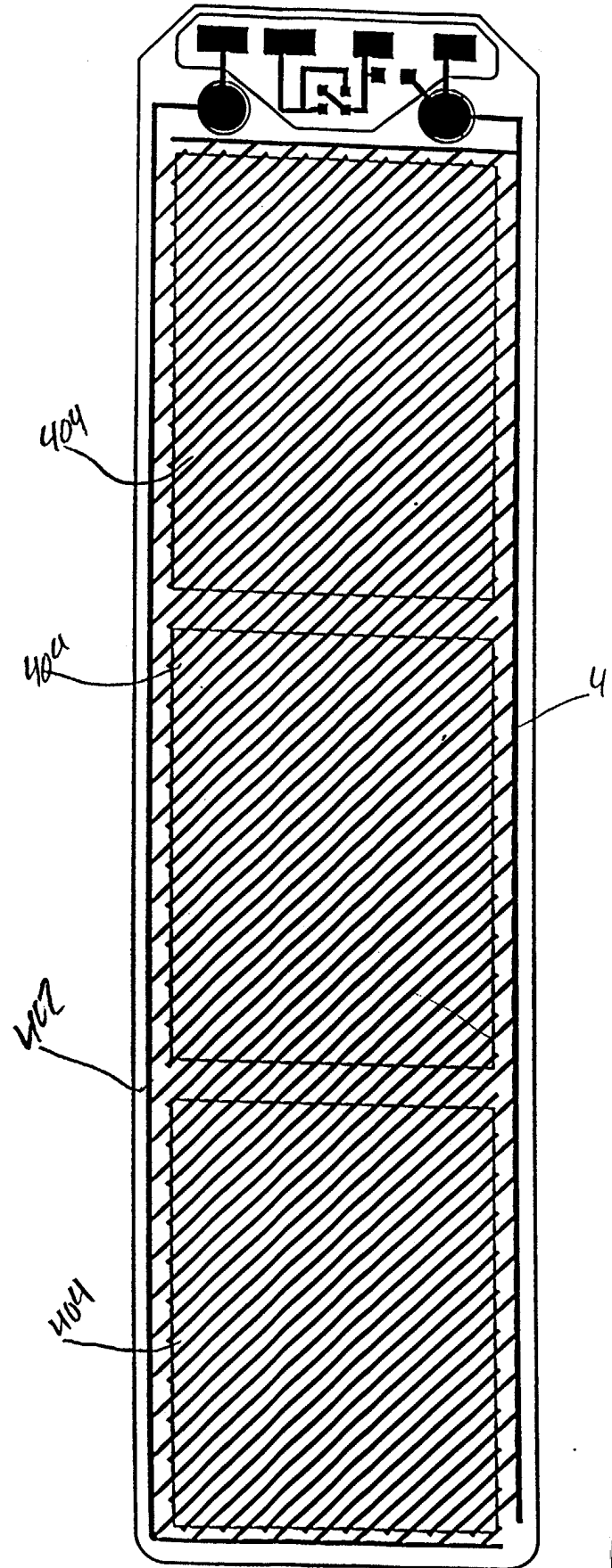


FIGURE 11B

662240" 2E400E60

FIGURE 12





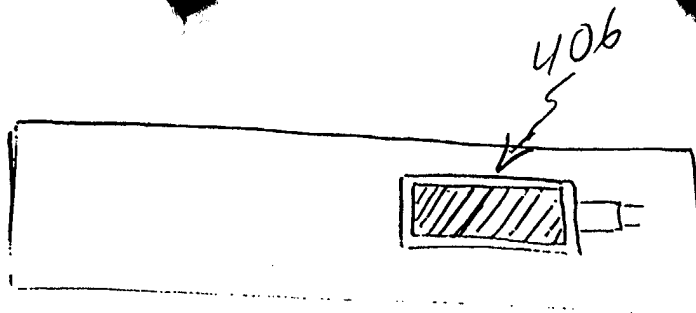


FIGURE 14A

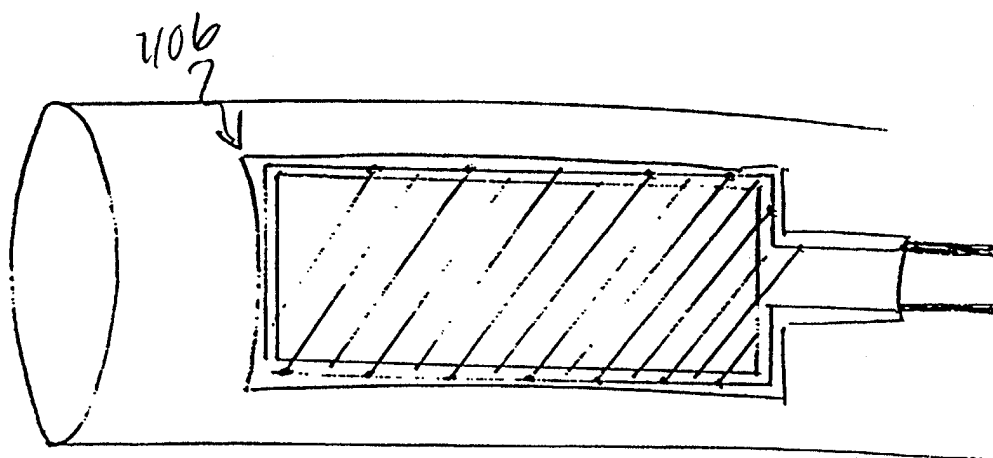


FIGURE 14B

66240:46100E60

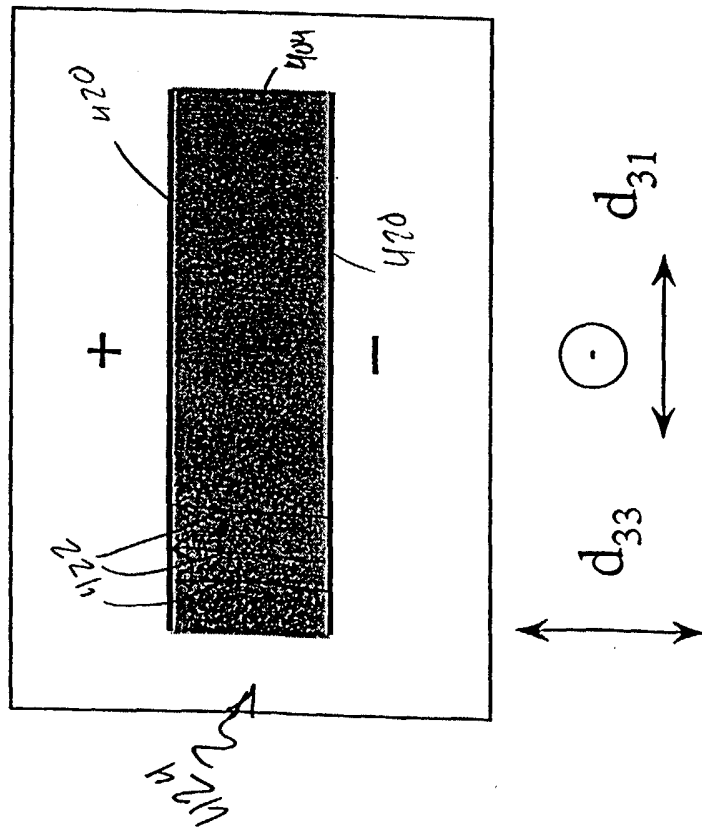


FIGURE 15A

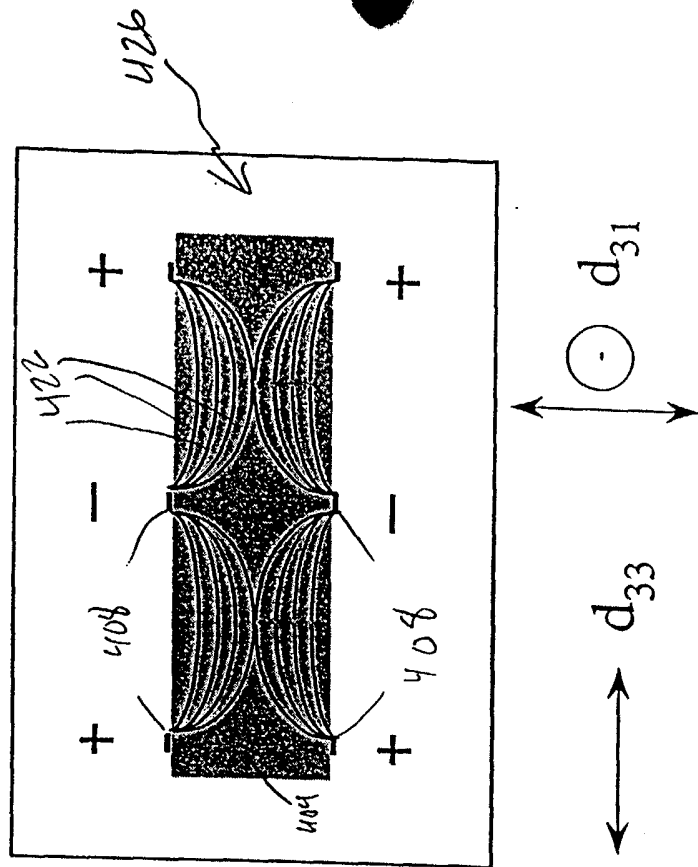


FIGURE 15B

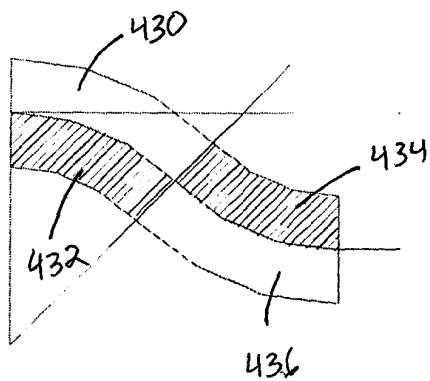


FIGURE 16

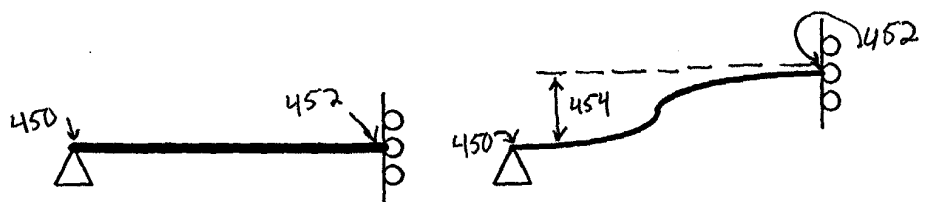


FIGURE 17

09300137-012759